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THE HAZARDS OF WORKING IN BEAUTY SALONS

by Andrea Hricko

Nearly one-half million workers are employed in the hairdressing and beautician trades. Over 90 percent are women.

These trades can be surprisingly hazardous. Hairdressers must stand in relatively fixed positions for long periods of time each day and are therefore likely to develop varicose veins. They often work in small, humid, and poorly ventilated salons or studios and are exposed daily to a variety of dangerous chemicals. And they may suffer "nervous fatigue from the constant need to be pleasant to customers."

AEROSOL HAIR SPRAYS

Some of the most hazardous chemicals used in the trade are found in aerosol hair sprays. Most manufacturers consider the exact composition of hair sprays a trade secret. However, these sprays usually consist of dangerous resins, plasticizers, solvents, propellants, and additives.

Although sprays are composed of complex combinations of chemicals, few have been adequately tested to determine their harmful effects on workers or consumers. One experiment exposed healthy men and women to 20-second bursts of hair spray. Many of the volunteers suffered breathing difficulties and chest tightness immediately after the spraying.

The use of hair sprays has also been associated with an increased risk of lung disease. A National Institute of Occupational Safety and Health (NIOSH) study found that practicing female beauticians had twice as many symptoms of lung disease as women who did not work in beauty parlors. The study also found that cosmetologists in small salons had the greatest risk of developing lung disease. Of even greater concern, an earlier study of 227 cosmetologists found one definite and four suspected cases of lung cancer—an unusually high rate.

Betty Medsger © 1975 from *Women at Work*

Resins such as *PVP* (polyvinyl pyrrolidone) which are frequently used in hair sprays as stiffening agents have been suspected of building up in the lung and causing lung disease. *PVP* resins have caused cancer in animal experiments.

Aerosol propellants are also dangerous. The use of *vinyl chloride* as a propellant was banned in 1974, after the chemical was implicated as the cause of a rare liver cancer in exposed industrial workers. Vinyl chloride is now known to affect genetic material (cause mutations). It has also been associated with increased stillbirths and miscarriages among the wives of exposed workers. Until 1974, vinyl chloride was frequently used in commercial hair sprays.

Fluorocarbons such as Freon are the most widely used aerosol propellants. The effects on the heart and lungs of constant low-level exposures (such as in beauty parlors) are still unknown. However, sudden deaths have occurred when people purposefully inhaled fluorocarbon sprays "to get high."

Fluorocarbons are now believed to interfere with the ozone layer of the earth's atmosphere which shields us against ultraviolet radiation. Continued

use of fluorocarbons could decrease the ozone and result in an increased incidence of skin cancer. In September 1976, a National Academy of Sciences panel concluded that fluorocarbons should be restricted within the next 2 years. Other scientists believe that fluorocarbon sprays should be banned immediately.

HAIR DYES

Hair dyes, a \$250 million dollar a year business, are also potential health threats to beauticians and the public. When Bruce Ames, Ph.D., a biochemist at the University of California, Berkeley, studied 169 "permanent" hair dyes (the hydrogen peroxide type), he discovered that 89 percent (150) caused gene mutations in bacterial tests. Nine of the 18 different chemicals tested caused mutations.

These results are especially disturbing because scientists now suspect that chemicals which can cause mutations can also cause cancer. In addition, exposure to mutation-causing chemicals (mutagens) by men or women may interfere with their ability to have normal, healthy children.

According to Dr. Ames, hair dyes can be absorbed through the scalp. Because of his alarming laboratory findings, Ames has recommended studying the incidence of birth defects and cancer in: (1) workers who manufacture hair dyes, (2) women who dye their hair, and (3) beauticians and hairdressers who apply these substances.

OTHER BEAUTY PREPARATIONS

Skin diseases, allergic reactions, and asthma have been reported among beauticians. Skin irritations have been linked to working with depilatories, permanent wave solutions, nail polishes, and organic hair dyes. Beauticians have developed allergies to nail polishes, nail sprays, and cold and permanent wave solutions.

Solvents used in polishes can also

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Many hairdressers have already switched to less dangerous non-aerosol sprays.

be hazardous. Although acetone is the most commonly used solvent, the more hazardous toluene, xylene, and even occasionally benzene are sometimes present. Benzene and xylene can both damage the blood-producing organs in the body.

ACTION

To protect yourselves against harmful exposures to hazardous chemicals and unnecessary strain, you should:

- **Make sure you're working in an adequately ventilated studio**
- **Ask your supplier to label the ingredients on the beauty preparations**

you use so that you can look up the hazards and avoid such chemicals as benzene

- **Switch to non-aerosol hair sprays, as many hairdressers have already done**
- **Wear plastic surgical gloves if you must apply hair dyes and depilatories**
- **Sit down as often as possible during the day, and occasionally elevate your feet**

This article is adapted from WORKING FOR YOUR LIFE: A WOMAN'S GUIDE TO JOB HEALTH HAZARDS, a 200-page handbook for woman workers. Order from LOHP Publications, 2521 Channing Way, Berkeley, CA. 94720: \$8.00—institutions and professionals; \$5.00—others.

HEALTH HAZARD ALERTS

If you are a . . .

Sandblaster

NIOSH has issued a warning that silica still poses a deadly problem for millions of exposed workers. A Tulane University study showed that 80 cases of silicosis have been reported among sandblasters in the New Orleans shipbuilding industry in the last three years. Forty of the victims are now dead.

According to *Job Health News Service*, use of silica sand in blasting operations has been banned for more than 25 years in Great Britain; the safer but more costly coal ash is used instead.

OSHA recently proposed new standards for abrasive sandblasting to protect the nation's 70,000 sandblasters. Copies of the proposal can be obtained by writing OSHA Standards Office, 3rd and Constitution Ave., N.W., Washington, D.C. 20210.

Plumber or Hospital Worker

Explosions in three hospitals and two clinics have prompted a NIOSH warning about the use of sodium azide in blood cell counters. About 15,000 hospitals and labs in the U.S. use blood cell counters with sodium azide. The chemical is used as a preservative and is flushed down the drain with the blood after the test is performed.

The drain pipeline can thus be bathed with the discarded sodium azide, which can then combine with other metals and solder in the plumbing system. Lead or copper azide—both extremely explosive—can be formed as a result.

Violent explosions have occurred when plumbers have tried to clear blocked drainage systems in labs using sodium azide.

Decontamination procedures should be obtained immediately by lab personnel, plumbers, and maintenance workers. Write to NIOSH, 5600 Fishers Lane, Rockville, MD. 20852, or to the Occupational Health Branch, California Department of Health, 744 P St., Sacramento, CA. 95814. California officials say that two substitutes for sodium azide are commercially available.

If you are exposed to . . .

Hydrogen sulfide

Deaths continue to occur from worker exposure to hydrogen sulfide, particularly in the gas and oil industry. In the State of Texas alone there have been 24 deaths in the last two years from acute exposure to this dangerous gas.

Hydrogen sulfide can be formed by the decomposition of organic matter containing sulfur, and is therefore found in mines, cesspools, etc. It can also occur as a byproduct of industrial processes—such as the production of viscose rayon, synthetic rubber, petroleum products, dyes and leather.

At high concentrations, hydrogen sulfide can cause immediate death. When breathed, it is absorbed into the blood stream and can, within a few seconds, cause unconsciousness. If the victim survives, various lung problems may develop. At lower levels of exposure, the gas may cause irritation of the mucous membranes, headache, fatigue, irritability, insomnia and eye irritation.

Hydrogen sulfide gas smells like rotten eggs, but prolonged exposure can lessen the nose's ability to detect it. Thus, workers can be overcome without warning. NIOSH has issued recommendations for hydrogen sulfide work practices in the oil and gas industry. These can be obtained by writing NIOSH, 5600 Fishers Lane, Rockville, MD. 20852.

Benzene

NIOSH has asked OSHA to regulate benzene as a cancer-causing substance, because exposure to the chemical has been linked to leukemia and other blood diseases. Two million workers are potentially exposed to benzene in printing, lithography, and dry cleaning, and in the manufacture of coke and gas, adhesives, coatings and other chemicals.

The agency is particularly concerned about service station attendants, since benzene is present in gasoline. NIOSH has warned that benzene should be prohibited as a solvent in open-type operations and that "it should be replaced with less harmful substitutes wherever feasible."

NIOSH has recommended that workplace exposure be kept to very low levels—one part per million (1 ppm). The current OSHA standard is 10 ppm, with a ceiling limit of 25 ppm. The United Rubber Workers have asked for an emergency standard for workplace exposure to benzene, but OSHA has not yet taken any formal action.

HEALTH AND SAFETY ACTIVITIES OF INTERNATIONAL UNIONS

by Janet Bertinuson

The 1970 OSH Act established the Occupational Safety and Health Administration as the agency responsible for setting and enforcing occupational safety and health standards. Since the act was passed five years ago, unions have been forced to carry an increasing amount of the employer and government responsibility for insuring that workplaces are actually safe and healthy.

In an effort to evaluate union activity in health and safety, Public Citizen's Health Research Group (HRG) conducted a survey of 15 international unions whose members (in the opinion of HRG) are most likely to be exposed to chemical hazards because of the industries in which they work. This survey is not all-inclusive. Some large unions such as the Teamsters, or smaller unions with active health and safety programs (e.g. Woodworkers and Firefighters) were not included in the study.

The survey looked at several areas of activity. Some of the findings are listed below.

Education

■ **United Steelworkers of America** have conducted international health and safety conferences with an average participation of 1,200 members.

■ **Oil, Chemical and Atomic Workers (OCAW); International Association of Machinists and Aerospace Workers (IAM); and the United Auto Workers (UAW)** have conducted their own training sessions on the local, district, and international level.

■ **IAM** has published a book, "Help for the Working Wounded", by their advisor, Dr. Thomas Mancuso.

■ **OCAW** publishes a monthly newsletter, *Lifelines*.



OCAW Health Specialist, Sylvia Krekel, and Industrial Hygienist, Rafael Moure, plan education programs.

■ **Textile Workers** published and distributed a pamphlet, "Is Your Workplace Safe".

Medical Programs and Industrial Hygiene Surveys

■ **UAW** has 300 in-plant representatives trained to do workplace monitoring.

■ **The International Brotherhood of Painters and Allied Trades (IBPAT)** has a mobile unit which travels around the country to give medical exams to members.

■ **United Mine Workers (UMW)** is implementing a mandatory x-ray and treatment program for miners.

Morbidity and Mortality Studies (Death and Illness Studies)

■ **United Electrical, Radio, and Machine Workers (UE)** is conducting studies with Mt. Sinai Environmental Laboratories of workers exposed to PCBs (polychlorinated bi-phenyls) and asbestos.

■ **Amalgamated Clothing and Textile Workers Union (ACTWU)** have conducted studies of asbestos textile workers, cotton textile workers, and die and finishing workers.

■ **United Paperworkers International (UPI)** have conducted noise studies including noise measurement and hearing tests.

■ **United Steelworkers of America (USWA)** have conducted studies of coke-oven workers.

■ **The United Rubber Workers (URW)** have done morbidity studies of styrene-butadiene workers.

Bargaining

■ **UAW** won the right to have full-time health and safety representatives trained at the company's expense and provided with monitoring equipment paid for by the company.

■ **UMW** won mandatory health education classes for 3,000 committee members.

■ **OCAW** struck against Shell Oil (1973) to win health and safety contract language which set up joint health and safety committees, provided for outside consultants, provided morbidity and mortality statistics.

■ **URW** won a cents per hour agreement with the nation's leading tire manufacturers to support university research on hazards in the rubber industry.

Legislative and Political Action

■ **OCAW and HRG** sued the U.S. Department of Labor resulting in Federal standards for 14 carcinogens.

■ **Steelworkers, URW, IAM, and Textile Workers** successfully lobbied for a stricter vinyl chloride standard.

■ **CWA, Textile Workers, URW, OCAW, and Steelworkers** representatives testified at hearings on the proposed noise standard.

■ **Steelworkers** testified at hearings on the coke-oven standard.

■ **Textile Workers** sued the US. Department of Labor for a stronger cotton dust standard.

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Carolyn Bell and Louis Beliczky, URW Industrial Hygienists, discuss monitoring techniques.

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■The **URW** is fighting for a stricter benzene standard.

■**IUE** waged successful battles to block state plans in New York and New Jersey.

■**Steelworkers and OCAW** have been extremely active in appealing to the Occupational Safety and Health Review Commission.

■**American Federation of Government Employees (AFGE)** and **American Federation of State, County and Municipal Employees (AFSCME)** have been working for better coverage under OSHA for government employees.

Recommendations

HRG indicates in several areas that the questionnaire responses probably do not fully reflect union activity. In addition, the above list does not include all responses to the questionnaire.

The survey concludes with several findings and recommendations by HRG:

Well-staffed and well-motivated international unions are so important to occupational safety and health.

Worker health is still not a top priority issue with many international unions.

In our opinion, few union costs are more important than health costs, and a sizeable chunk of every union's assets should go toward health research and advocacy.

. . . courses to members on occupational health. . . should be expanded, together with conferences, convention programs and any other publicity device that will alert members to the dangers that threaten their lives every working day.

Collective bargaining is the way to turn knowledge of health hazards into preventive or corrective contract language. We believe that leaving health to the employer is just as foolish as leaving wage rates to the employer.

DOCTOR'S CORNER

by Donald Whorton M.D.

Dear Doc:

We are park employees who often have to control sucker growth from eucalyptus stumps with the use of the weed killer, 2,4-D. We use it in two manners: one is a fine spray and the other involves pouring 2,4-D into notches cut in the stumps. When we sprayed, we would become lightheaded, so we were given respirators to wear. Even with these respirators, we became dizzy although not as severely or frequently. When we use the pour method, however, we have no noticeable effects. We also wear protective clothing and waterproof rubber gloves over surgical gloves. Can you tell us about the dangers of this chemical?



As with most agricultural chemicals, very little is known about the long-term effects of exposure to 2,4-D (dichlorophenoxyacetic acid). This herbicide can cause nausea, vomiting and nervous system depression (with such symptoms as dizziness, lightheadedness, drunkenness and sleepiness). There are also reports of individuals who have developed problems with functioning of the nerves, such as loss of sensation and coordination after drinking 2,4-D or having their skin or clothes soaked with it. The chemical is more toxic if swallowed or inhaled than when applied to the skin. But if contact occurs, the skin should be washed immediately. It has also been shown to harm the liver and kidneys in animal experiments.

The spraying process creates a fine chemical mist which can be readily

inhaled. Thus, when you work without any type of respirator protection, you breathe enough of the chemical to produce an effect, i.e. dizziness. The other method of application, pouring, does not allow as much of the chemical to become airborne and inhaled. Your comments that no one develops dizziness when pouring indicates that this is a safer method of application.

Whenever you use a respirator, follow the directions for its proper use. In your case, where you use paint spray respirators with activated charcoal filters, you must follow the manufacturer's instructions about replacing and caring for the filters, or the effectiveness of the respirator may be seriously reduced.

If the correct respirator is properly used and workers still complain of dizziness, then the problem could be one of adjustment to working with a respirator. This is especially true when you are working hard and must breathe more rapidly and deeply.

Ask your employer for information on the respirator you are using. If you are still not certain you are using the right one, then I would suggest calling the Cal/OSHA area office or the County or State Health Department for further advice. I would strongly recommend that the use of 2,4-D be restricted to the pour method, but that you also continue to wear appropriate protective clothing with gloves to make certain that it does not get on your skin.

If there are still problems with the pour method, I would suggest implementing some other less hazardous method of sucker control.

Requests for information on your work problems should be addressed to: Dr. Donald Whorton, LOHP, 2521 Channing Way, Berkeley, CA 94720.

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